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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/656,273

09/08/2003

Fumio Takahashi

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22850

7590

07/26/2005

OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER

DOAN, JENNIFER

ART UNIT

PAPER NUMBER

2874

DATE MAILED: 07/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/656,273

Applicant(s)

TAKAHASHI, FUMIO

Examiner

Jennifer Doan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 15-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 15-17, 20-22 and 25 is/are rejected.
- 7) ☒ Claim(s) 18, 19, 23 and 24 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 May 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 090803.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The prior art documents submitted by applicant in the Information Disclosure Statement filed on 09/08/2005, have all been considered and made of record (note the attached copy of form PTO-1449).

Drawings

3. The drawings, filed on 05/26/2004, are accepted.

Specification

4. Applicant is reminded of the proper language and format for an abstract of the disclosure.

In line 1 of the abstract recites "Disclosed" which should be avoided since the language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Appropriate correction is required.

Claim 15 is objected to because of the following informalities:

In lines 2, 4 and 6 of claim 15 recite "manometer" which should be changed to "nanometer".

Appropriate correction is required.

Applicant's cooperation is requested in correcting any other errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 15-17, 20-22 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimotakahara et al. (U.S. Patent 6,522,819).

With respect to claim 15, Shimotakahara et al. disclose a dispersion-shifted fiber having a zero dispersion wavelength that is longer than 1640 nanometer (column 3, lines 20-21); a dispersion of -1.0 ps/nm/km to -10.0 ps/nm/km in a wavelength range between 1530 nanometer and 1625 nanometer (column 5, lines 9-10); a dispersion slope of a positive value less than 0.07 ps/nm²/km in the wavelength range between 1530 nanometer and 1625 nanometer (column 5,

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line 30); a polarization mode dispersion of not more than $0.1 \text{ ps}/(\text{km})^{1/2}$ at a wavelength of 1550 nm (column 5, lines 14-15).

Shimotakahara et al. do not explicitly disclose a dispersion-shifted fiber having an effective area of $40\text{-}70 \text{ }\mu\text{m}^2$ at the wavelength of 1550 nanometer.

However, an effective area of $40\text{-}70 \text{ }\mu\text{m}^2$ at the wavelength of 1550 nanometer is considered to be obvious, since the efficiency of the optical transmission is dependent on the effective area of the fiber. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the effective area of the fiber of Shimotakahara's device within the range as claimed for the purpose of obtaining the highly efficient transmission of optical signal, and it also has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art and it is noted that the applicant does not disclose criticality in the ranges claimed. *In re Aller*, 105 USPQ 233 (see MPEP § 2144.05).

With respect to claim 16, Shimotakahara et al. substantially disclose all the limitations of the claimed invention except a transmission loss at the wavelength of 1550 nanometer is 0.200 dB/km or less.

However, a transmission loss at the wavelength of 1550 nanometer being 0.200 dB/km or less is considered to be obvious, since the efficiency of the optical transmission is dependent on the transmission loss in the waveband. Therefore, it would have been obvious to one having ordinary skill in the art at

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the time the invention was made to modify the transmission loss of the fiber of Shimotakahara's device with the value as claimed to transmit the light beam for the purpose of obtaining the highly efficient transmission of optical signal, and it also has been held that discovering an optimum value of a result effective variable involves only routine skill in the art and it is noted that the applicant does not disclose criticality in the value claimed. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980) (see MPEP § 2144.05).

With respect to claim 17, Shimotakahara et al. (column 1) disclose the dispersion-shifted fiber, wherein the transmission loss at a wavelength of 1383 nanometer is less than the transmission loss at a wavelength of 1310 nanometer.

With respect to claims 20-22 and 25, Shimotakahara et al. (column 2, line 40- column 3, line 6) disclose the dispersion-shifted fiber further comprising a center core having a first refractive index at the center; a second core that surrounds the center core, the second core having a second refractive index, the second refractive index being less than the first refractive index; a third core that surrounds the second core, the third core having a third refractive index, the third refractive index being greater than the second refractive index; and a clad that surrounds the third core, the clad having a fourth refractive index, the fourth refractive index being less than the third refractive index, wherein relative refractive index differences of the center core the second core and the third core with respect to the clad are set to positive values.

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Allowable Subject Matter

7. Claims 18, 19, 23 and 24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art fails to disclose or reasonably suggest the dispersion-shifted fiber, wherein an increase in the transmission loss at the wavelength of 1383 nanometer after hydrogen aging is not more than 0.04 dB/km as recited in claim 18.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer Doan whose telephone number is (571) 272-2346. The examiner can normally be reached on Monday to Thursday from 6:00 am to 3:30 pm, second Friday off.

9. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

10. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public

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PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in cursive script that reads "Jennifer Doan".

Jennifer Doan

Patent examiner

July 21, 2005